BITS computing&communications news

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COMPUTING, INFORMATION, AND COMMUNICATIONS (CIC) DIVISION • LOS ALAMOS NATIONAL LABORATORY

Hearing-impaired students have difficulty learning to speak because they lack appropriate feedback about how to move their tongue, jaw, and lips to create correct speech sounds. A program developed at Los Alamos National Laboratory by George Papcun, Igor Zlokarnik, John Hogden, David Nix, Derek Carlson, and Katherine Dueringer can give students feedback about how to correctly move their mouths to form speech sounds. As students talk into a microphone attached to a specially equipped computer, the computer shows an animated display of the speaker's tongue, jaw, and lip positions (see illustration). The program that generates the display is called ADAM (Advanced Display of Articulator Motion). Other uses of ADAM include speech therapy and teaching foreign accents.

Inside this issue

CIC Customer Service Center . . . . . (505) 665-4444 or cichelp@lanl.gov

Integrated Computing Network (ICN)

Consulting:

Centralized scientific and engineering computing .....consult@lanl.gov or 7-5746

Lab-wide administrative and business systems .....labwide@lanl.gov or 7-9444

Passwords (required for access to ICN) .....validate@lanl.gov or 5-1805

Central Computing Facility (CCF) 7-4584

Advanced Computing Laboratory (ACL) 5-4530

Desktop Support Center (DSC) 7-4357 (7-HELP)

For PC questions: PC-help@lanl.gov or 7-9372

For Macintosh questions: Mac-help@lanl.gov or 5-1361

For UNIX questions: UNIX-help@lanl.gov or 5-2220

For groups with CIC-2 support contracts: 5-2220

Telephone Services Center 7-3400

(includes voice mail)

Computer training

Lab-wide systems support training.....7-9444

Computer/workstation training.....7-9399

Personal computer training.....7-9071

Microcomputer support facility seminars.....7-4357

(Macintosh/IBM software, lending library)

List of Forms

CIC-1 Web Team Designs and Revises Web Pages

Many organizations are rushing to communicate and market themselves via the Internet, and the Laboratory is no exception. Several members of Communication Arts and Services (CIC-1) have seen this rush and created a Web Development and Design team to help Laboratory groups secure a place on the Internet with professional, productive, and informative Web sites.

The CIC-1 Web Development and Design team feels very strongly about upholding traditional Laboratory communication practices and applying them to the Web. Because the Web is very different from conventional media, many traditional communication and publishing practices are lost in the Internet. That's why the CIC-1 team's expertise in communication and design can help you get the most out of your Web site.

You've probably already seen some of the team's work; they are responsible for the "new" look and organization of the Laboratory's main level of Internet pages which is located at http://www.lanl.gov/Internal/Welcome.html. They have also worked on Web pages for

• Bradbury Science Museum (http://www.lanl.gov/Public/Museum/),

• LANSCE (http://www.lansce.lanl.gov/),

• MST Division (http://www.mst.lanl.gov/),

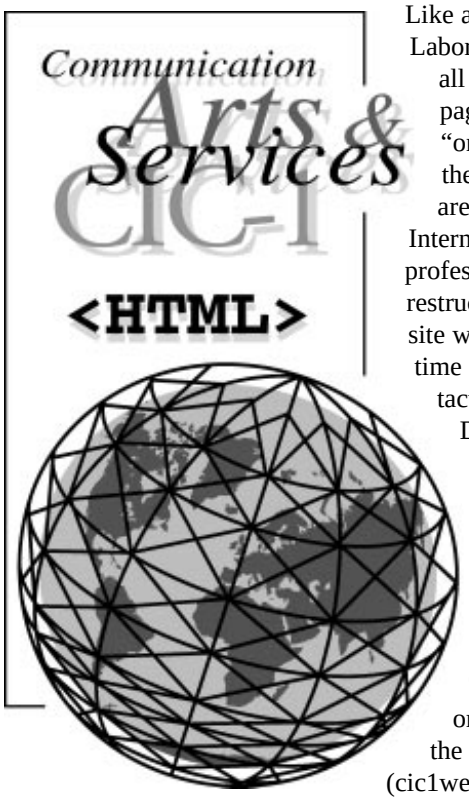
• CIC Division (http://www.lanl.gov/Internal/divisions/cic/),

• Diversity Office (http://www.lanl.gov/projects/DIVERSITY/Welcome_dvo.html), and

• Government Relations Office (http://www.lanl.gov/Internal/projects/GRO/GR_Welcome.html).

This team is part of the Laboratory-wide Information Architecture initiative that is defining public policies and HTML guidelines.

The most important benefit the CIC-1 Web Development and Design team provides is saving you time and money in the initial setup of your Web site, as compared with doing all the Web design and HTML formatting yourself. Depending on your needs, the team can provide your group with as much support as you wish, from graphic and logo design to front-end organization and writing and editing services. After the initial setup, the CIC-1 Web Development and Design team is available for consultation and support, and they can also direct you to other CIC groups that provide Web-related services, such as server setup and programming. The team will work within your budget and can provide estimates on how much a job will cost. For more information, please check out the Web Development and Design team's service link (http://cic1-www.lanl.gov/services/WWW/www.html).



Like all hard copy Laboratory publications, all Laboratory Web pages need to have "one clear voice" on the Internet. If you are ready to join the Internet and want design professionals to create or restructure your Web site while saving you time and money, contact the CIC-1 Web Development and Design team and ask how they can service your group's Web needs. Call the CIC-1 customer service desk at 7-INFO (7-4636) or send an e-mail to the team's alias (cic1webteam@lanl.gov).

Amy Ferguson, aferguson@lanl.gov, (505) 665-8380
Communication Arts and Services (CIC-1)

Questions and Answers from the ICN Consulting Office

The following questions were selected from over 600 that were sent to consult@lanl.gov during the month of May 1996.

Question 1: Using Netscape, when I click on the OAG (Online Airline Guide), I get a message that says "Unable to find application."

Answer 1: The error "Unable to find Application" is caused by the need to configure your browser to point to a Telnet application. To accomplish this open Netscape and select Options, Preferences, and Applications (not Helper Applications). Now enter the appropriate workstation-dependent information shown below.

	UNIX	PC	Mac
Telnet Application:	xterm -e telnet%h %p	c:/pctcp/wtnvt.exe	Click on browse and select telnet (must have NCSA Telnet installed).
TN3270 Application:	xterm -e tn3270 %h	c:/pctcp/	
Rlogin application:	xterm -e rlogin %h	N/A	
Rlogin with User:	xterm -e rlogin %h -l %u	N/A	
Temporary Directory:	/tmp	c:/temp	

If you have trouble, see your "computer person" or call CIC-2 at 7-HELP.

Question 2: If I write to a CFS file more than once, does CFS keep the old version(s) around, and can I still access it?

Answer 2: No, there is no "old" version of a CFS file. When you do a store or replace, the old file is gone.

Question 3: What are the toll-free numbers to access tig?

Answer 3: The number is 1-800-443-1461, but it is not a toll-free number. TIG local service (667-9020, 9021, 9022, 9023, 9024, and 9025) costs $1.20 per hour. TIG 1-800-service costs $8.40 per hour. The advantage is that it gets billed to your group under your default charge code, which eliminates the need to get reimbursement from a personal billing for long distance calls.

Question 4: Isn't it true that I should be able to change my room number in the finger/EIS file. If so, how do I do it? I looked around in Register and can't find the correct path.

Answer 4: You must get into the EI system on IB to do this. Your group secretary can also do it for anyone in the group. It cannot be done from Register.

Question 5: Is there a problem with the pop server? My e-mail gets hung up when looking for the pop server.

Answer 5: Yes, we have been having problems with the pop servers and are working to make things better. No mail has been lost.

Question 6: I just tried to log on to IA via telnet. At the first prompt I typed ia, then my Z-number and my passcode. The response was "Timed out" and I was disconnected. Is something wrong with ia or did the log-on procedure change? Am I "blacklisted"?

Answer 6: This occurs on occasion when the password folks add a new Smartcard to the system. A new version of software is being developed so this won't happen. You are not blacklisted.

E-mail message of the month: Occasionally we don't respond to e-mail as fast as the customer would like and we were pleased to receive the following options from a user urging us to answer an e-mail request he'd sent earlier:

"I'm sitting on my hands here. Can you choose one of the options below:

1) I'm busy and can't get to this till _____,

2) This is a hard problem, I'm still looking,

3) This is an easy problem, and we can't stop laughing long enough to reply, or

4) None of the above."

The answer turned out to be number 2! But remember, if it is urgent, calling us at 667-5746 is the fastest way to notify us of a problem or to get an answer.

ICN Consulting Office, consult@lanl.gov
667-5745 (option 3), Customer Service Group (CIC-6)

Life in the Fast Lane: Using LSF to Cut Down on Cluster Computing Time

What's your favorite number? While this may seem like a silly question, the idea behind it prejudices many LANL Cluster users. Users forget that the LANL Clusters are basically homogeneous. All of the nodes are essentially identical. You can use whichever node is available. The fewer processes running on a node, the more time the CPU has to dedicate itself to any one job. In spite of this, I have spoken to many Cluster users who always run jobs on the same machine—no matter what. "I have always used ibm-04, and by golly, I always will!" When I point out that ibm-04 is swamped at the current time and no one is computing on another node, say ibm-06, users reluctantly switch nodes and then get their work done faster. They are amazed. They always seem to ask, "How do you know which node to compute on?" Load Sharing Facility (LSF) takes care of that for you automatically.

In a previous BITS article ("Balancing and Distributing Workload on the Clusters with Load Sharing Facility," November 1995) Doug Lora demonstrated how LSF can submit batch jobs for you. Let's look at some other ways in which LSF can help out the Cluster user. LSF acts like a cop directing computing traffic on the Cluster. It sees the load on individual nodes and can automatically redirect jobs to a less-loaded node. This helps prevent some nodes from being overused while other nodes remain idle. By taking advantage of LSF's easy-to-use features, you can avoid computing bottlenecks and fully utilize the Cluster's distributed environment. LSF is currently running on the Open (IBM) Cluster and the Secure (HP) Cluster. A complete Web-based tutorial on LSF is almost completed and should be available soon.

lsload…..What is the current load?
You can quickly see what the load is on the Cluster by using the lsload command. A typical output from lsload looks like the example shown above.

Here we see a listing from the Open Cluster. The listing is ordered from least-loaded to most-loaded node. In this example, ibm-08 is the least loaded Cluster node. The status of most nodes is ok; ibm-02 and ibm-07 are busy. The r15s, r1m, and r15m columns refer to the average CPU run queue lengths for the last 15 seconds, 1 minute, and 15 minutes, respectfully. In short, this is roughly the number of processes available to use the CPU during the sampling time. The ut column shows the utilization rate, or percent time the CPU was busy during the last query. The virtual paging rate is displayed under the pg column. A rule of thumb is the higher the paging rate, the less RAM available for interactive jobs. The number of actual users logged in is displayed under ls. Note that although there are 13 users logged in on ibm-08 , it is the least loaded node! Just because users are logged in does not necessarily mean that they are using CPU cycles. The idle time is displayed under it. Lastly, the tmp, swp, and mem columns show the available memory available to /tmp, swap space, and available memory.

lslogin…..How do I log in to the least loaded Cluster node?
It never fails. When you connect to the Cluster, you are certain to pick a highly loaded node. Nine nodes could be sitting idle, and you end up choosing the one that is full. As you saw above, lsload will show you the load on the Cluster nodes. You can pick one from the table and then connect to that machine.

```
ibm-04> lsload

HOST_NAME  status    r15s  r1m  r15m    ut      pg  ls   it   tmp   swp   mem

ibm-08       ok      0.0   0.0   0.2    7%     0.9  13    5   65M  945M  389M
ibm-09       ok      0.2   0.2   0.6   19%     2.4   5    3   70M   67M  392M
ibm-04       ok      1.0   1.0   1.0  100%     0.6   3   36   66M  463M  186M
ibm-03       ok      1.0   1.0   1.0  100%     0.2   1   90   66M  472M  194M
ibm-05       ok      1.0   1.0   1.0  100%     0.3   2   63   66M  943M  432M
ibm-06       ok      1.0   1.0   1.0  100%     0.5   0  130   66M  973M  426M
ibm-10       ok      1.0   1.0   0.8  100%     0.4   3   21   70M  758M  236M
ibm-01       ok      2.0   2.0   2.0  100%     0.3   1  101   66M  458M  194M
ibm-02     busy      0.0   0.3   0.4   26%   *28.6   4    0   65M  470M  208M
ibm-07     busy      1.0   1.2   1.1  100%   *26.5   3  116   66M  934M  396M
```

An alternative is to let LSF choose for you. The command lslogin, when issued from any Cluster node, will automatically log you into the least-loaded Cluster node. It is fast. There are no names asked, no passwords to enter, and no tickets to obtain. Poof!—you're there. Try it! If you ever forget which node you are on, you can use the hostname command. Better yet, set your prompt in your .cshrc or .login file. Include the statement `set prompt="`hostname`%` somewhere in one of your "dot" files and your prompt will reflect your current Cluster node hostname.

I automatically run lslogin every time I log onto the Cluster. This way I am guaranteed to be on the least loaded node without trying to figure it out on my own.

lsrun…..Run an interactive job on the least loaded Cluster node.

Many people run jobs interactively. Some jobs are short; others can take a bit of time. The lsrun command will submit your job to the least-loaded Cluster node. This means you do not have to check the load with lsload or log on to the least loaded node via lslogin. See the following example:

```
ibm-04> lsrun job
This job is being run on this host:ibm-09
Fri Apr 19 16:02:24 MDT 1996
```

You can see that although I was logged onto ibm-04, the job actually ran on ibm-09. The remote job created with lsrun will run as any other job would. You can suspend and interrupt the job, resume the job, and even bring it to the back/foreground. If you need terminal interaction with the program, use the -P flag (i.e., lsrun -P vi).

Try using lsrun to submit your jobs. They will be routed to the node that is least loaded. In other words, the machine will be able to dedicate more CPU time to the job, and more dedicated CPU time means less wall clock time. If you have any questions about LSF, please contact the ICN Consulting office at (505) 665-4444, option 3, or e-mail us at consult@lanl.gov.

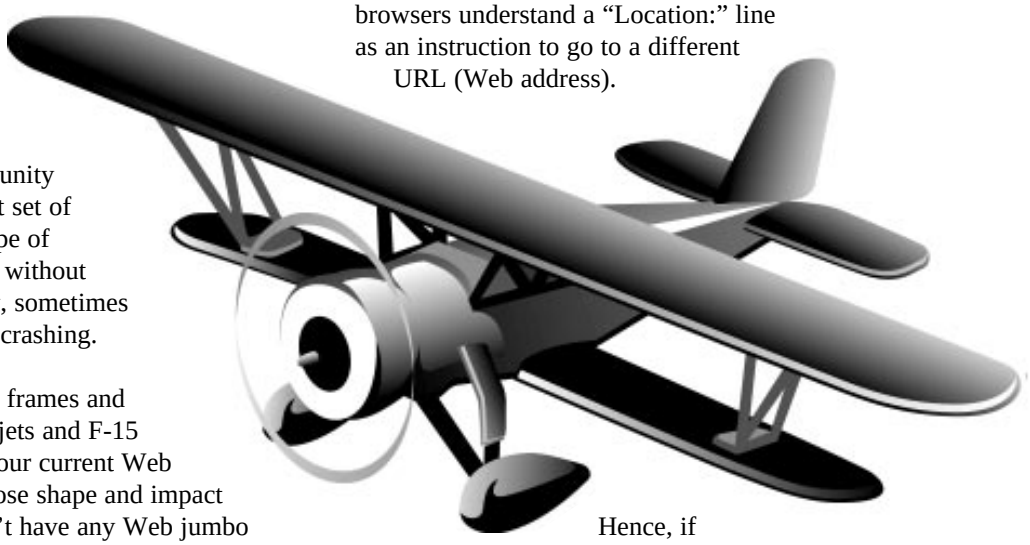
Dale Hugo Leschnitzer, dale@lanl.gov, (505) 665-5868
ICN Consulting Office (CIC-6)

Changing your path to accommodate LSF

For LSF (Load Sharing Facility) to run properly, you must have it in your default path. Include /usr/local/lsf/bin in your default path and /usr/local/lsf/man in your "manpath." If you do not know how to change your path, please contact the ICN Consulting Office at (505) 665-4444 option 3 or consult@lanl.gov.

Barnstorming the Web

Barnstorming. The word conjures images of early flying machines, bundles of scrounged parts held together by baling wire, piloted by "characters," who navigated cross country by the seats of their pants, landing in grassy pastures and waiting for the townspeople to come out to see the new machines, the new possibilities of flight. Sound a bit familiar? That's what today's Web community is doing. We're using a different set of tools and working a different type of space, but we're still navigating without maps, patching things on the fly, sometimes flying high, and sometimes just crashing.



Just as their biplanes with wood frames and cloth fabric gave way to jumbo jets and F-15 Eagles and moon shots, so will our current Web develop into a future reality whose shape and impact we can barely imagine. We don't have any Web jumbo jets yet. (Show me a search engine that knows how to find what you really want instead of what you ask for.) But we do have a growing toolbox, and there's an increasing number of simple things we can do to make our Web space more interactive, more responsive, and more effective.

This article highlights a few simple things I've personally found useful. It's not intended to be comprehensive or to address complex applications. It's just a few simple tricks, really, presented to illustrate a way of thinking about the Web, a way of looking for practicable ways to move the Web forward.

To Build a Better Button

Like it or not, if we really want to call people's attention to the fact that something is a clickable option, buttons are what they recognize. (Personally, I used to be big on buttons. Then I abandoned them for performance reasons. Now I'm using them again—sparingly and differently.)

If you've tried building buttons by putting HREFs (HyperText references) around images, then you probably already know the problems associated with them. It takes time for them to load (a performance hit). They have different sizes and different colors on different monitors (an appearance hit). And they don't look the same as the submit/reset buttons you get on forms (a consistency hit).

One solution to all of the above problems is to wrap the button in a form and leave it to the browser to handle the rendition. This approach loads fast and looks consistent with the browser's other buttons. The key here is that modern browsers understand a "Location:" line as an instruction to go to a different URL (Web address).

Hence, if you output a "Location:" line from a CGI (common gateway interface) script, you can automatically redirect the user. (Older browsers will see the "Location:" line appear as a hot link, which the user can click on to go forward.)

Here's what I use:

HTML fragment—

```
<form method=POST
action="http://pathname/scriptname.pl">
<input type="hidden" name="dest" value="http://target-URL">
any text you'd like before the button
<input type="submit" value="Button Text">
any text you'd like after the button
</form>
```

Perl fragment—

```
print "Location: $FORM{'dest'}\n\n";
```

Change the path name, target-URL, Button Text, etc., as needed. Note that the Perl script is reusable; you can call the same script from various forms because the target URL is defined in the HTML form instead of the script. (Note also that anytime a variable is defined in the HTML, you should validate input to the Perl script before acting on it—see "CGI Security," BITS, February 1996. Alternatively, you can hard-code the URL into

the Perl script if you're more comfortable that way.) Because we are not restricted to a single form per page, we can build multiple buttons this way by wrapping each in its own form, and we can use tables, lists, etc., to control formatting.

The first drawback to a "formed" button is that it acts slower than an HREF link when it is clicked (because the background script has to run). This is counterbalanced by the facts that the page with the button loads faster and a lot more people will be looking at the page than clicking the button. The second drawback is that the buttons don't mix well with GIF masthead images, etc. Hence, if it's really important that graphics be arranged "to the pixel," then a large image map is the better way to go.

With modern Web servers, image maps are easy. Just wrap the image in an HREF to a map key file, and enter the destinations and coordinates in the map key file. You don't even need to call a separate program; modern servers handle that automatically.

For example, the HTML code would be similar to this:

```
<a href="mapname.map">
<img src="graphic.gif" ismap border=0>
</A>
```

Under NCSA HTTPd, the corresponding map file would appear something like this:

```
default http://pathname/default.html
rect http://pathname/option-1.html 50,50 100,100
rect http://pathname/option-2.html 101,50 150,100
rect http://pathname/option-3.html 151,50 200,100
```

The path name, option, and coordinates will vary according to the particular application.

One caution: Use buttons sparingly. Within an HTML page, they are a useful way of calling attention to important options that might otherwise be overlooked, but they lose their value if overused (what's important when everything's important?) and will never perform as quickly as simple links.

Another caution: Make image map buttons obvious. Leave blank space between them or else people might just think they're decorative. Then monitor the access logs to make sure people are using them, and redesign the buttons if people are not. (What seems obvious to the page designer/programmer isn't always apparent to others.)

Both of the button techniques described above are used on the Information Architecture (IA) home page at http://www.lanl.gov/projects/ia/ (or look under "What's New" from the Laboratory internal home page). Also, the image map at the top of that page had to be redesigned as described above because many people at first simply didn't recognize the buttons as options.

Discussion Support

Another thing we use buttons for in the IA Project is to call attention to the fact that people can comment electronically on any of the proposals we put forward. For this, there's an "Offer Comments" button in the introduction to each proposal, which calls up a form that people can use to submit questions, comments, suggestions, etc. (In the spirit of openness, no messages are screened for content; we take criticisms and non sequiturs as freely as we take praise.)

When the comments are submitted, three things happen:

- an e-mail message is sent to the discussion lists for the proposal (with copies to anybody the user specifies),
- the message is added to a hypermail archive linked to the specific proposal, and
- the message is added to an overall hypermail archive of discussions on all of our proposals.

As soon as the comments are submitted, the user can see that his/her comments have been added to the archive (which is available for anybody in the extended Laboratory community to read). This offers immediate proof that we are not screening the discussion. Also, as soon as the e-mail message goes out, anybody on the discussion lists can respond to the message, offering their own ideas, clarifications, etc. These responses are likewise added to the archives.

Since we implemented the button-based approach, we have seen a marked increase in the number of responses our Web documents have generated. We can't prove that this is due strictly to the buttons (it may be due to the content of the proposals or improvements in "marketing"), but since it is happening along with an increase in the number of hits on the discussion archives, it seems that the buttons are helping.

An important side effect of this is that the discussion archive, once it's captured, can remain attached to the document, creating a kind of "knowledge history." For as long as that document exists, there will be a record of the discussion that

shaped it into its final form. Anybody who then wants to check the project's claim that it listens to Laboratory-wide input can check the discussion archive for proof.

These features are currently implemented on all pending proposals. If you're interested in any of the underlying HTML or CGI code, please contact me at the address given below. (Now that we've identified the functionality we want, these particular functions are currently being upgraded, and anything I write today will be obsolete by the time this article reaches publication).

Link Deep and Keep Changing

To begin with, if you have an active Web space, you're likely to run up to several thousand files before you know it (from its beginning as a handful of meeting notes in late 1993, the IA Web space has now grown to roughly 5,000 files). An immediate side effect of this is that the Web space most likely grows several layers deep (otherwise, how do you keep it organized?). Most people visiting the Web space don't want to know all of this (plus they've rarely got time even to try). Instead, they want the "meat."

The easiest way to handle this is to allocate a section of your entrance point (typically but not always the home page) to a "news" section. Provide highlights of the latest changes that typical users are likely to care about, including a date (unless it's obviously changing every day), and link directly from that news section deep into the Web space, directly to the file that's being discussed. Make it obvious, and make it easy. It also helps to maintain an archive of previous news, so that people can track down things they might have seen earlier.

Examples of this approach include the following: (1) the "What's New" section of the "Inside LANL" home page (http://www.lanl.gov/Internal/Welcome.html), which is generally updated on a daily basis and (2) the "IA News" section of the IA home page (http://www.lanl.gov/projects/ia/), which is generally updated on a weekly basis.

Get People Involved

Everything described above is aimed at getting people more involved with the Web by giving them easy ways to use the Web and to communicate back to us. None of it qualifies as "bells and whistles" (running dog animations come to mind); it's just aimed at making it easier for people to do things with the Web.

As mentioned in the introduction, this article isn't intended as a comprehensive list of things we can do to get people involved. Content, for example, will always be the main thing that keeps people coming back, and presentation is just a matter of making that content accessible and meaningful. Still, though, the examples can hopefully illustrate a way of thinking, a way of taking existing possibilities and looking for ways to get people "hooked."

Plenty of people correctly point out that the Web is not yet reliable enough, secure enough, or functional enough to be of much use for standard tasks like word processing or spreadsheets. We have yet to build a Web jumbo jet. But already there's a lot we can do. Already we can call attention to things and involve people in two-way communications. Already we can use the Web to broadcast to widely dispersed audiences. Already the Web can bring Singapore, Ireland, and Brazil right to your desktop. And we're still flying the equivalent of biplanes.

Additional Information

If you would like further information about the IA Project, please visit our Web space at http://www.lanl.gov/projects/ia/ (or look under "What's New" from the "Inside LANL" home page). If you would like to participate in the IA Internet/WWW Subject Area, please feel free to join ia-area-web@lanl.gov (or select the "Email us" button from the IA home page). If you would like printed or e-mail copies of IA information, please contact Tad Lane at the address below.

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Information Architecture Standards Editor
IA Internet/WWW Subject Area Champion
Communications Arts and Services (CIC-1)

How to Get Unattached to E-mail Attachments Part 2: A Look at the PC

There are few things more frustrating when using computers than trying to decode an unwilling e-mail attachment. This article will briefly examine how e-mail attachments are dealt with on the PC. For a more through description of encoding methods (such as BinHex, uuencode, and MIME) as well as information about how to deal with attachments on the Macintosh, see last month's BITS article, "How to Get Unattached to E-mail Attachments Part 1: A Look at the Macintosh."

E-mail attachments are usually binary files, such as a Microsoft Word document or an Excel spreadsheet. These binary files are 8-bit files that do not fair well if sent "as is" over the Internet. They must first be encoded into a 7-bit, text-only format and then piggy-backed onto an e-mail message. The "standard" for e-mail attachments on the Internet is MIME (Multipurpose Internet Mail Extensions), which uses the 7-bit encoding method called Base 64. Although MIME is the proscribed standard, in reality, it still has a ways to go before it totally replaces its contenders: the Macintosh BinHex and the UNIX (and PC) uuencode.

If you send an attachment from a PC to another PC and both use the same e-mail program, you have a good chance of getting the attachment intact on the other end. Other than that, and especially when receiving attachments from other computer platforms, you may need to jump through a hoop or two before you can make sense out of the attachment.

It should be mentioned that if you are using Eudora 2.x on your PC, you may not need much of the information presented in this article. Eudora 2.x should be able to decode any MIME, uuencoded, or BinHex file sent to it. (Freeware versions [1.x] of Eudora do not do uuencoding, however.) If you are using Eudora, it's helpful if you set aside a specific attachments directory into which your incomming e-mail attachments will be sent. First create the directory you want to use to hold your attachments. (If you have Windows 95, you can put an Attachments folder on the desktop, if you want.) If you have the newer versions of Eudora, you would select Settings... from the Special menu, click on the Attachments icon, and click on Attachment Directory. Then select the directory you previously created. (In older versions of Eudora, you would first select Configuration... from the Special menu.) Now whenever you receive an attachment, it will be stored in this directory. (Note: always remember that any attachment you receive may contain a virus, so be careful of attachments, especially if you aren't sure where one came from.)

A File by Any Other Name…

Although the file naming situation is getting better with Windows 95 and the NT File Space, which allow long file names, it's still basically a DOS world out there. This means that file names need to be in the 8.3 format. (Eight characters before the period and three after.)

When you receive an e-mail attachment, its long file name may get truncated in a less-than-optimal manner, and the file name may need to be modified. The PC uses a file name's extension to specify its file type. For instance, ".DOC" specifies a Microsoft Word document. Although you can do a File-Open from within the proper application to open the misnamed file, it's easier if the file is named correctly and will open when double-clicked. To correctly name the file, however, you must first know what type of file you just received, which in many cases is not clear. Of course all this assumes that the file was decoded correctly in the first place, which may not be the case.

First Step: Did It Decode?

If you are using Eudora 2.x you are in luck: it should be able to decode any MIME, uuencoded, or BinHex file sent through the Internet. (However, note that the freeware [1.x] versions of Eudora do not do uuencoding.) Lotus Notes decodes only MIME, as did earlier versions of Word Perfect Office; Microsoft Mail and cc-Mail only decode uuencode.

So, in the worst case scenario, the attachment did not detach from the e-mail and is hanging on like an uninvited guest at the bottom of the body within the e-mail message. If the attachment was encoded with BinHex, it will start with "(This file must be converted with BinHex 4.0)." If the attachment was encoded using uuencode, it will start with something like "begin 700 somefile.doc." A MIME/Base 64 encoded message will start with something similar to "Content-Type:application/" followed by two other lines that start with the word "Content."

To decode an encoded e-mail attachment, you first need to save the text of the attachment in a separate file. In Eudora, you would select Save As from the File menu. This process is similar for other e-mail programs.

Once the e-mail attachment is unattached in a separate file, it needs to be decoded. A good utility for doing this is StuffIt Expander. (See Figure on page 9.) This freeware program can be downloaded from the following location:

ftp://ftp.scruz.net/users/aladdin/public/SITEX10.EXE

StuffIt Expander for Windows

StuffIt Expander can decode files encoded with uuencode (.uue) and BinHex (.hqx), as well as MacBinary (.bin), ARC (.arc), Arj (.arj), and gzip (.gz). It can also decompress StuffIt (.sit) files and Zip (.zip) files (see next section).

Second Step: Was the File Compressed?

If you can send your desired attachment as text (that is, if it does not have graphics, etc.), you could send it in the body of the e-mail, which eliminates the need to send it as an attachment. In any other case, the file will be encoded in MIME, uuencode, or BinHex. In addition, it's also possible to compress the file before it is sent to reduce transmission time. You can also combine a number of separate files into one, compressed file, making the files easier to send.

The most popular compression scheme used on the PC is the .ZIP format. A very useful tool for .ZIP compression and decompression is the shareware program called WINZIP, which is available on the Web:

http://www.winzip.com/ WinZip/ winzip_x .html

Third Step: When All Else Fails…

You might find yourself in a situation in which the attachment did not decode or decompress properly. Despite your best efforts, the attachment looks like garbage. In this case the file may have been corrupted at the sending end, or it may have been garbled in transmission. In either case, you will need to ask the sender to resend it to you or to send it to a co-worker of yours who uses the same e-mail program as the sender.

Another possibility is that the attachment may seem to have decoded, detached, and decompressed correctly, but you can't seem to do anything with the resulting file. In this case, the file may belong to an application that is not on your computer. For instance, if the file is a PowerPoint file, you will need PowerPoint (or a utility that can display PowerPoint Files) on your computer. You should also check that you have all the document translators installed in your applications. These translators are not always installed by default, as is the case with Microsoft Word, so you may need to do a custom install to get the translators. (You can also download additional translators from Microsoft via their Web page [www.microsoft.com] located in the support section.) Using Adobe Acrobat to create pdf files is a way around the "application not found" problem because these files are application independent and are "tri-platform" as well.

Microsoft Word allows you to open any file on your PC. Do a File-Open and then at the bottom of the File-Open dialog box, select "All Files (*.*)" instead of "Word Documents (*.DOC)" next to the "Files of Type:" selection. If the file is from an obscure application, you might be able to see a reference to the name of the application within the file. If nothing else, the file may contain useful text (along with a lot of "garbage"). You can, however, edit out the garbage and extract the useful text from the file.

In Conclusion

Receiving e-mail attachments can be one of the most frustrating things you will have to do on a computer. Unfortunately, it's a complicated world out there and sometimes e-mails go through all kinds of contortions before they finally end up in your e-mail In box. If you are having trouble and need help with attachments, you can always call the folks at the CIC-2 PC software support line at 7-5884.

The Lab's Information Architecture project (http://www.lanl.gov/projects/ia/) has been looking at the problem of e-mail attachments and has formed the IA E-mail Subject Area Team. This team has released a draft RFC (Request for Comment) on the issue of e-mail standards (see http://www.lanl.gov/projects/ia-lanl/teams/ia-rvw/drafts/). They proposed that as a "tactical" standard, e-mail clients should support MIME, BinHex, and Uuencode; and for a "strategic" standard, MIME should become the Laboratory standard by May 1997. Also, take a look at

http://w3.lanl.gov/projects/ia-lanl/areas/email/e-results.html

for an impressive collection of information about various e-mail packages, including what types of attachment encoding/decoding they support.

John Layne, jpl@lanl.gov, (505) 665-5090
Desktop Group (CIC-2)

Vendor Computer Training

The Customer Service Group (CIC-6) supports vendor training in technical computing areas such as programming languages, system administration, networking, and World Wide Web development tools. The support provided by CIC-6 can be as limited as providing the appropriate facilities for a specific group or as extensive as coordinating training functions such as system administration, vendor acquisition, EDS administration, and class facilitation. The table below lists classes that are either currently being offered or are available on request. An expanded list of classes that are potentially available can be viewed on the Internet at

http://www.lanl.gov:8010/computer-information/ComputerTraining/Vendor.html

To request registration in any vendor course or for general assistance with vendor training, please contact the CIC-Division Vendor Training Coordinator at (505) 667-9399 or send e-mail to cic6-train@lanl.gov.

*Cost per student will vary depending on the total number of students enrolled in the class.

Course Title	Date	Time	Cost	Course Number
C Programming (Beginning)	**8/5-9/96**	**8:30 – 5:00**	**$1000-$1500***	**3996**
	Prerequisite(s): An understanding of and useful skills in a high-level programming language. A current ICN password is required. Topics Include: Introduction and Fundamentals; Basic Semantic Constructs - Getting; Base Level I/O With C; The Preprocess-Compilation Environment; Operators, Data Types, and Storage Classes; Control Flow Constructs; Conditional Constructs; Higher-Level Data Constructs in C; File I/O; UNIX Software Tools and POSIX System Calls.			
C Programming (Advanced)	**9/9-13/96**	**8:30 – 5:00**	**$1000-$1500***	**4777**
	Prerequisite(s): Useful skills and experience with the C Programming. A current ICN password is required. Topics Include: Data Structures, Algorithms, and OOP; An Advanced Clinic for C ; The ANSI C Recommendation X3.159; C and ANSI C War Stories; The Data Structure and the Assessment of Algorithms; Arrays; Structures; Unions; Stacks; Queues; Linked Lists; Recursive Functions; Binary Trees; Hashing; File Organizations Using the C Runtime Library; Standard Interprocess Communication Mechanisms; and An Introduction and Overview of AT&T's C++ 3.0.			
C++ for Experienced Programmers	**Available on Request (5 days)**		**$1000-$1500***	**9050**
	Prerequisite(s): Excellent C Language programming skills. Topics Include: Major Differences and Additions to ANSI C; Building C++ Classes; Introduction to Text I/O with C++; Function Overloading; Single Inheritance; Virtual Functions; Multiple Inheritance; Operator Overloading; Creating, Initializing and Assigning Objects; Passing and Returning Objects; Templates, Parameterized Functions and Classes; C++Stream I/O with the File System; and C++ Course Summary.			
C++ Visual Windows Programming	**7/22-26/96**	**8:30 – 5:00**	**$1600-$2000***	
	Prerequisite(s): C programming experience. Topics Include: Introduction to Visual C++; A Working Introduction to Windows Programming; Concepts of Object-Oriented Programming; Classes; Memory Management; Scope and Access Control; Functions in C++; References and Argument Passing; Operators; Class Design, Single Inheritance; Polymorphism and Virtual Functions; Microsoft Foundation Class Library; Windows Event Handling; The Mouse; The Keyboard; Graphics Device Interface; Dialog Boxes; Windows Memory Management; Menus and Accelerators; Document/View Architecture; MDI and Multiple Views; and Visual C++ and NT.			

Course Title	Date	Time	Cost	Course Number
Common Object Request Broker Architecture (CORBA) Seminar	**7/1-5/96**	**8:30 – 5:00 (4 days)**	**$1200-$1500***	**11563**
	Prerequisite(s): Familiarity with client/server environment; distributed, integrated applications and object oriented technology tools. Topics include: CORBA - A strategic overview; The future of CORBA; Technical introduction to CORBA; ORB interoerability; Universal Networked Objects (UNOs); Internet Interoperability Protocol (IIOP); The Dynamic Skeleton Interface (DSI); and Bridges.			
Perl Programming	**Available on Request (1-3 days)**		**$400-$600* per day**	**8095/8093**
	Topics Include: Describes the programming language that occupies the niche between shell and C Programming; syntax and semantics; data types; operators, control flow, regular expressions, and I/O facilities; the Perl debugger.			
Perl Programming for the WWW	**Available on Request (2-3 days)**		**$400-$600* per day**	
	Prerequisite(s): Programming skills with a light background in Perl and HTML. Topics Include: On-line Resources; Server Configuration; Permissions; Setuid Issues; Tainting; Safe Perl; Data Security; OO Programming; Web Modules; CGI Programs; CGI.pm; What Went Wrong?; CGI Template; Using Forms; Form Template; Input Widgets; Submit Widgets; Reset Widgets; Sample Form; Password Fields; Textareas; Hidden Fields; Checkboxes; Radio Boxes; Popup Menus; Lisboxes; Image Maps; Random Links; libwww Modules; Sending Mail; Shopping Carts; Database Access; and Advanced Topics.			
SGI System Administration (Beginning)	**7/8-12/96**	**8:30-5:00**	**$260**	**7993**
	Prerequisite(s): Familiarity with using Silicon Graphics IRIS workstations and system administration procedures on other open system platforms. Topics Include: The Role of the System Administrator; Set Up and Configuration of an IRIS Workstation or Server; Supporting a Group of Silicon Graphics Users; System Security Maintenance; Backups and Recoveries; Configuration of Disk Drives; System Installation and Application Software; Attaching Terminals and Printers; Modifying the system Start Up and Shut Down Sequences; Automating Administrative Procedures; and Performing Basic System Troubleshooting.			
SGI Network Administration	**8/26-30/96**	**8:30-5:00**	**$1700-$2200***	**11690**
	Prerequisite(s): Completion of Silicon Graphics System Administration (Beginning) course or equivalent knowledge and experience. Topics Include: Networking Fundamentals; Network Configuration; Network Troubleshooting; Resource Management with Network; Information Services; Domain Management with Domain Name System; Electronic Mail with Sendmail; Remote File Sharing with Network File System & Automounter; Network Performance Monitoring; and Network Security.			
SGI System Administration (Advanced)	**9/9-13/96**	**8:30 – 5:00**	**$1700-$2200***	**11689**
	Prerequisite(s): Completion of Silicon Graphics System Administration (Beginning) course or equivalent knowledge and experience. Topics Include: System Error Monitoring; Kernel Reconfiguration and Debugging; System Monitoring Tools; Process Management; MultiProcessor CPU Management; Memory Management and Tuning; Swap Management and Tuning; Disk Management and Tuning; XPS Filesystem Management; and System Security Concepts.			

Course Title	Date	Time	Cost	Course Number
Solaris 2.X Network Administration	**Available on Request (5 days)**		**$1300-$1700***	**8107**
	Note: This course was previously called Solaris 2.X System Administration (Advanced). Prerequisite(s): Completion of Solaris 2.X System Administration (Beginning) class or equivalent knowledge and experience. Topics Include: Network Configuration; Remote Installation Procedures; Advanced Security Techniques; Troubleshooting Techniques; Customizing Sendmail; network Application Tools; and Name Service Configuration.			
TCP/IP Internet-working on Windows NT	**Available on Request (4 days)**		**$1200-$1700***	
	Prerequisite(s): Completion of Windows NT Workstation and Server class or equivalent knowledge and abilities.Topics Include: Station-to-Station Communications; Connecting the Network; The TCP/IP Protocol Suite; IP Addresses; Subnets; TCP Utilities; System Configuration; SNMP; System Performance; IP Address Resolution; NetBIOS Name Resolution; Host Name Resolution; Implementing WINS; WINS Installation, Configuration, and Management; DHCP in Operation; Implementing DHCP; IP Routing Primer; Windows NT Routing; Heterogeneous Environments; TCP/IP Printing Support; and Installing the FTP Server.			
UNIX (Beginning)	**6/24-28/96**	**8:30 – 12:00**	**$738**	**5267**
	Prerequisite(s): Familiarity with a UNIX workstation. Topics Include: Overview of the Workstation Environment; Getting Started; The UNIX File System; Manipulating Files; Customizing Your Environment; The C-Shell; Editing and Writing with vi; Using the Network; Discussing NFS and NIS; Using Basic System Status Commands; Startup and Shutdown Procedures; Using tar.			
Volume Manager (VxVM) for System Administrators	**Available on Request (3 days)**		**$900-$1200***	
	Prerequisite(s): Knowledge of Solaris system administration is required.. Topics Include: Overview of Logical Volume Management; Introduction to VxVM Levels of Abstraction; Software Installation; Introduction to Administrative Interfaces; Software Initialization; Disk Configuration Management; Volume Configuration; Software Components; Administrative Command Utilities; Advanced Operations Through Low-Level Configuration Utilities; On-Line Reconfiguration Functionality; Analysis and Tuning; Conventions and Recommendations; and Failure Recovery and Other Issues.			
Windows NT Workstation and Server	**Available on Request (5 days)**		**$1300-$1800***	
	Prerequisite(s): This course is valuable for personnel who are evaluating or migrating to Windows NT. It benefits system and network administrators, other support personnel, programmers, and users from Windows, Unix, OS/2, or VMS backgrounds. Topics Include: Introduction to Windows NT; System Overview and Security; Network Configuration Options; Installation; Server Choices; User Administration and Security; Files and Printers; Built-in Network Support; Configuration Options; Using Setup; Data and Disk Management; The Registry; Troubleshooting; and Optimization and Performance.			
World Wide Web Development (Advanced)	**7/30/96 – 8/2/96**	**8:30 – 5:00**	**$1200-$1600***	**11526**
	Prerequisite(s): Prior knowledge of basic HTML, WWW servers, and browsers. Topics Include: Introduction; Advanced HTML; Netscape Advanced Features; Perl Programming; Common Gateway Interface (CGI); Quality Assurance Testing; Image Maps; Filers and Data Conversion Programs; Security; Graphical Tools; Internet Resources; Registration on the WWW; Statistics; Database Integration; Searching; Graphics; and Extended Data Types.			

Research Library Training

The LANL Research Library provides training for using its specialized databases. Training sessions begin and end at times indicated below. Classes are free but you must pre-register by calling the Research Desk at 7-5809 or sending e-mail to library@lanl.gov. Special classes and orientations can also be arranged.

Date	Time	Subject Matter
6-4-96	1:00-1:30 p.m.	1996 Chemical Abstracts on CD-ROM
6-5-96	1:00-1:30 p.m.	Finding Addresses and Phone Numbers on the WWW
6-6-96	1:00-1:30 p.m.	SciSearch at LANL—At your desktop!
6-6-96	2:00-4:00 p.m.	Information Sources on the Internet via WWW
6-11-96	1:00-1:30 p.m..	Energy Database—At your desktop!
6-12-96	11:00-11:30 a.m.	MELVYL (U of CA Specialized Databases)
6-13-96	1:00-1:30 p.m.	Business Sources on the WWW
6-18-96	1:00-1:30 p.m.	Finding Secret Information (Q-clearance required)
6-19-96	11:00 -11:30 a.m.	Current awareness/Updates on MELVYL
6-20-96	1:00-1:30 p.m.	MathSciNet -- Mathematical Reviews on the WWW
6-20-96	2:00 - 4:00 p.m.	Information Sources on the Internet via WWW
6-25-96	1:00 - 1:30 p.m.	Commercial Information for Patent Applications
6-26-96	1:00 - 1:45 p.m.	New Employee Orientation/Research Library Overview (sign up not required)
6-26-96	1:00 - 1:30 p.m.	Finding Addresses and Phone Numbers on the WWW
6-27-96	1:00 - 1:30 p.m.	NTIS (US Govt-sponsored research)—At your desktop!

Lab-Wide Systems Training

The Customer Service Group (CIC-6) offers training for users of Laboratory information systems. The CIC-6 courses offer training for a variety of personnel including property administrators, group secretaries, training coordinators, budget analysts, group leaders, or anyone needing to access training records, property records, costs, employee information, travel, chemical inventories, etc. Refer to the table below and on the following pages for specific information about courses currently offered.

Course Registration

You must have a valid ICN password before taking any of the courses shown in the table. To register for a course, call CIC-6 Training, Development, and Coordination section at 667-9444. You will be sent a registration form to be completed and returned.

Course Title	Date	Time	Cost	Course Number
Administrative ToolKit	**Scheduled on Request**		**$260**	**Course #11395**
	A combination of the Directory Information, Signature Authority, TRIPS, and STORES system classes. The student will learn how to update directory information, assign signature authorities (purchase, SIGMA, etc.), submit travel requests, and purchase materials on-line. Reporting and printing for each system will also be covered.			
Automated Chemical Inventory System (ACIS):	**6/20/96**	**1:30 – 4:30**	**$260**	**Course #7480**
	Participants receive hands-on instruction to update the status (end-user,location, quantity) of chemical containers. Participants will also learn to generate chemical inventory reports by chemical name, end-user, location, and organization.			
Employee Development System - Basic Training (EDS I):	**6/12/96**	**8:30 – 12:00**	**$260**	**Course #5289**
	The course provides hands-on instruction to request course enrollment, use the on-line course catalog, retrieve training transcripts, and assign EDS authorities. The student will learn to create courses, add students to the courses, and generate several training reports.			
Employee Development System - Training Plans (EDS II):	**6/26/96**	**8:30 – 12:00**	**$260**	**Course #7155**
	Participants receive hands-on instruction to create and maintain training plans, assign assignment codes, and generate training plan reports. Attendees must have prior training in the Employee Development System (course #5289).			
Eudora Electronic Mail	**6/17/96**	**1:30 – 3:30**	**$130**	**Course #9762**
	This class is a hands-on class that teaches the participant how to use Eudora software to create, send, receive, and edit electronic mail messages. In addition to these procedures, the participant will learn what related settings mean and how to configure the system to meet his or her individual needs.			
Data Warehouse	**6/14/96**	**8:30 – 11:30**	**$260**	**Course #11050**
	Students will receive hands-on training to generate standard financial reports and make on-line queries from information in the “data warehouse,” a collection of data from Laboratory budgeting, accounting, and time-keeping systems.			

Course Title	Date	Time	Cost	Course Number
Facilities Project Information/Work Orders (FPI/WO):	**Scheduled on Request**		**$260**	**Course #6996**
	Lab-wide users with a need to view the status of work orders and tickets in their organizations will receive hands-on instruction to request, print, and review work order, ticket and project summary information reports.			
Financial Management Information System (FMIS):	**Scheduled on Request**		**$260**	**Course #8338**
	Participants receive hands-on instruction to "explode" and "transfer" through the costs, allocations, and outstanding commitments screens. In addition, participants will create/review reports, access the Information Manager Utility for printing reports, and learn how to assign authorities in the system.			
Hazardous Materials Transfer Tracking System for Nonradioactive Material (HMTTS/NRAM):	**Scheduled on request**		**$260**	**Course # 7907**
	Participants receive hands-on instruction to create, update, and print the non-RAM Hazardous Materials Transfer Form (HMTF). Attendees must have completed "Completing the HMTF for Non-RAM," course #7512, sponsored by HS-8.			
Hazardous Materials Transfer Tracking System for Radioactive Material (HMTTS/RAM):	**Scheduled on Request**		**$260**	**Course #7993**
	Participants receive hands-on instruction to create, update, and print the Radioactive Materials Transfer Form (RMTF). Information about the non-RAM Hazardous Materials Transfer Form (HMTF) is included. This course is appropriate for people who fill out both RAM and Non-RAM forms. Attendees must have completed "Completing the RMTF," course #7517, sponsored by HS-8.			
HTML Basics	**6/18/96**	**8:30 – 12:00**	**$260**	**Course #11605**
	Students will gain a basic understanding of HTML (Hypertext Markup Language), the language for the World Wide Web. Topics covered will be commands and standards, creating and editing documents, and authoring programs.			
Introduction to the Internet: Beginning Netscape	**6/18/96**	**1:30 – 3:30**	**$130**	**Course #10961**
	Students gain basic understanding of the Internet and the World Wide Web and the use of Netscape as a browser to surf the Net. Topics covered are both Laboratory sites and open sites, along with practical uses of the Internet.			
Key/Core System	**Scheduled on Request**		**$130**	**Course #10179**
	Key custodians and alternate key custodians receive hands-on instruction to add, update, and delete key and padlock information, and view assignment information and request reports. Students will also learn how to request key inventory notifications. Students must be a key custodian or alternate and have an ICN password.			

Course Title	Date	Time	Cost	Course Number
Lotus Notes Basic Concepts	**Scheduled on Request**		**$260**	**Course #9917**
	This class provides hands-on instruction for Mac and PC users to use Lotus Notes software to create and send E-mail memos; fax documents; search databases; create filters, nicknames, banners, and doclinks; set defaults; and use multiple address books. In addition, participants learn how to use the memo, meetings, and discussion databases.			
On-Line Forms	**6/18/96**	**3:30 – 5:00**	**$130**	**Course #9756**
	Participants will learn to use Netscape software to access Lab-wide information and forms. Using Jetform Filler software, participants will access, complete, and print forms such as the "ICN Validation Request," "Visitor Request for Unclassified Visits to Security Areas," and "Request for Quotation."			
PCS Overview	**6/10/96 and 6/20/96**	**8:30 – 9:30**	**no charge**	**Course #11924**
	Overview of Purchase Card System. Students will have taken BUS-5's credit card course. Call Ruby O'Rear at 665-4523 for course schedules.			
Property Accounting, Inventory, and Reporting System (Advanced)	**Scheduled on request**		**$260**	**Course #9918**
	This course will include a refresher of PAIRS, advanced techniques and tips, explanation of the notification system, and report capabilities. Swap Shop, Loan Out information, and support tables will be discussed. Participants should already have a basic understanding of and know how to use PAIRS.			
Purchase Card System	**6/13/96 and 6/26/96**	**8:30 – 9:30**	**no charge**	**Course #11924**
	Prerequisite: PCS Overview. Students will learn to reconcile monthly statement of account, submit reconciled statement of account for approval, print statement of account for audit records, and delegate reconciliation authority.			
Reporting with Infomaker	**6/6-7/96**	**8:30 – 5:00**	**$560**	**Course #11054**
	Hands-on training to query data and develop ad hoc, or non-standard, reports from the LANL data warehouse using Infomaker software.			
Secretarial/Contract Services (SE):	**Scheduled on request**		**$260**	**Course #7481**
	This class provides hands-on instruction for creating secretarial requests for temporary services, entering time for technical and nontechnical contract employees, and creating reports using the Information Manager Utility. The students will also learn how to review notifications and approve attendance. A training database will be used for the class.			
Time and Effort System (GUI)	**6/21/96**	**8:30 – 12:00**	**no charge**	**Course #11018**
	The student will learn how to enter attendance, amend attendance, approve attendance, and submit exception and approval reports. Time codes and associated policies will also be discussed. In addition, the student will learn how to use the Information Manager utility to view and print reports.			

CUT ALONG DASHED LINE

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National Laboratory

INTEGRATED COMPUTING NETWORK (ICN) VALIDATION REQUEST

To access ICN computing resources, please complete all parts of this form that apply to you, including "Special Requirements."

If you have **questions**: Call: (505) 665-1805
E-mail: validate@lani.gov

Mail your completed application to:
ICN Password Office (PWO)
Mail Stop: B271
Los Alamos National Laboratory
Los Alamos, NM 87545

All Laboratory computers, computing systems, and their associated communication systems are for official business only. By completing this request, users agree not to misuse the ICN. The Laboratory has the responsibility and authority to perodically audit user files.

Owner Information

Z-Number (if you have one)	PWO Use Only	Name (last, first, middle initial)
LANL Group	LANL Mail Stop	Citizenship (Foreign National see "Special Requirements-Foreign National")
Phone Number	Cost Center	Program Code

Check LANL affiliation:

- ☐ LANL employee
- ☐ Contractor _____ (specify contract company)
- ☐ Consultant, VSM, associate
- ☐ External user_____ (specify employer)
- ☐ Other (specify)_____

Send password / smartcard to:

☐ Mail Stop or ☐ Mail to address indicated below

Name / Organization
Address
City, State, Zip Code

Access Check access method and needed partitions:

Access method: ☐ ICN Password ☐ Smartcard ☐ Both

☐ **Open** partition (e.g., email systems, open machines)

☐ **Administrative** partition (e.g., IA [BUCS, Stores, Travel], IB [EIS, FMIS, PAIRS])
If you are not a Q-cleared LANL employee, see required steps in section "Special Requirements-Administrative Partition," unless you already have Administrative access with an ICN password.

☐ **Secure** partition (i.e., secure machines)
Indicate level(s) of data to be processed:
- ☐ Unclassified
- ☐ Secret

I certify this person does require secure access:

_____ _____
Manager Signature (Group Leader or above) Date

NOTE: A Q-clearance is required. All classified computing must be performed within the Secure environment.

PWO Use Only

New ☐ Change ☐	Clearance Status	Processed	Lv	Smartcard Serial #
Comments:				

Form 1646 (1/95) Supersedes previous versions (rev. 10/20).

Continue

Special Requirements

Administrative Partition

(U.S. Citizens Only) Lab-Wide Systems (e.g., IA [BUCS, Stores, Travel], IB [EIS, FMIS, PAIRS])

☐ Under 18 years of age

If you need to access Administrative systems, your group leader must provide a memo accepting responsibility for your actions and justifying your need for access. This memo is to accompany all forms taken to the security briefing (see "Contractor or Non-Q-Cleared") section below. You may not access the Secure Partition.

☐ Contractor or Non-Cleared

Phone (505) 667-9444 to obtain Access Authorization packet.

Phone (505) 667-9153 to schedule a security briefing.

Bring all forms including this ICN Validation Request to the security briefing for approval.

Security Briefing Approval Signature	Date

☐ Foreign National

Attach a copy of Form 982 (REQUEST FOR UNCLASSIFIED VISIT OR ASSIGNMENT BY A FOREIGN NATIONAL) with all approval signatures. Be sure Box #11 of Form 982 is completed. If you are not a visitor/assignee under a LANL/DOE approved Visit / Assignment Request, attach written justification from your host Division Director describing your need to access the ICN.

Authorization (required)

Print Manager Name (Group Leader or above)	Manager Z-Number	Group
Manager Signature (Group Leader or above)	**Mail Stop**	**Date**

If you are NOT a LANL employee, obtain your LANL contact's signature in addition to the contact's manager's signature.

NOTE: LANL contacts are regular Laboratory employees. Contacts are responsible for obtaining annual re-authorizations, forwarding renewals, and notifying the ICN Password Office of changes in user or contact status.

Print LANL Contact Name	Contact Z-Number	Phone Number	Group
LANL Contact Signature		**Mail Stop**	**Date**

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INDEX

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